

IEEE Software and Systems Engineering Standards Used in Aerospace and Defense

An IEEE eLearning Library Course Program

As we move forward to the future of the Aerospace and Defense industry, it is crucial for technical professionals to understand the critical software and system components for the programs they are building.

IEEE Software and Systems Engineering Standards Used in Aerospace and Defense, a five-course program offers guidance on process standards for aerospace and defense. This online program provides an overview of IEEE Standard 1012 and the IEEE 29119 series of standards specifically with the aerospace and defense industry in mind.

Upon completion of this course program, technical professionals will:

- Understand how to use the IEEE standards for life cycle processes
- Know how to apply the verification and validation process within a system of interest based on IEEE Standard 1012
- Identify the role, benefits, and need for software test modeling over the complete software lifecycle
- Comprehend the applicability of ISO/IEEE 29119 series for aerospace and defense usage

The course program is suitable for system engineers, software engineers, as well as any individual working in back-end systems.



This course contains audio descriptors for the blind and visually impaired which are compatible with screen readers.

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Quick Facts

Develop the skills and knowledge needed to succeed:

Five-course program designed to give engineers an understanding on process standards for aerospace and defense.

Courses developed and peer reviewed by experts in their fields, a process that guarantees the quality of technical content

Printable IEEE CEU or PDH certificates awarded upon successful completion of the program via the ILN

Available on-demand through IEEE *Xplore*, the IEEE Learning Network or order files to load on a company LMS

Organizational pricing available: pay one price for all users in an organization. Multi-program discounts also available.

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Courses Included in the Aerospace and Defense Program:

Software and Systems Engineering Standards: Life Cycle Processes

This course shows systems engineers how to use IEEE standards for life cycle processes; understand life cycle and engineering process concepts; select and apply useful systems and software engineering standards; and employ special considerations for the critical programs of defense and aerospace. Upon completion, technical professionals will understand complex issues throughout the interrelated life cycle processes.

Software and Systems Engineering Standards: Implementing DevOps Best Practices

The development and operations practices are known as DevOps. This course discusses the required development and operations practices for building reliable and secure systems both in general and in regulated environments. Upon completion, learners will know what DevOps are, how they can be implemented, and what their value is— especially for aerospace and defense usage.

Software and Systems Engineering Standards: Verification and Validation of Systems, Software, and Hardware

This course is a walk-through of IEEE Standard 1012 on verification and validation of systems, including for both software and hardware. Upon completion, users will know the basic concepts (purpose, benefits) related to verification and validation (V&V).

Software and Systems Engineering Standards: Software Testing Driven by Standards and Models

As an overview of the IEEE 29119 series of standards for software testing, this course teaches its applicability during the complete software lifecycle with specific emphasis on aerospace and defense purposes. Note: The fifth course in this program is an expanded portion of this course.

Software and Systems Engineering Standards: The Five Supporting Parts of the ISO/IEC/IEEE Std 29119 Software Test Series

This course is a walkthrough of the five steps summarily mentioned in course four. It provides detail on the five supporting parts of the IEEE 29119 series of standards from proposal to retirement. The standard includes concepts, processes, documentation, testing techniques, and keyword driven testing.

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